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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/621,028	07/21/2000	Eric J. Bergman	255/236 P00-0036US2	4066

22249 7590 08/02/2002

LYON & LYON LLP
633 WEST FIFTH STREET
SUITE 4700
LOS ANGELES, CA 90071

EXAMINER

EL ARINI, ZEINAB

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 08/02/2002

11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/621,028

Applicant(s)

BERGMAN, ERIC J.

Examiner

Zeinab E. EL-Arini

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24, 26 and 27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24, 26 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

The amendment, the remarks, and the terminal disclaimer filed on 06/17/02 have been acknowledged and entered.

The rejection under 35 U.S.C. 112, second paragraph stated in paper No. 8 has been withdrawn in view of applicant's amendment.

The double patenting rejections stated in paper No. 8 have been withdrawn in view of the terminal disclaimer.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-24 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. (5,749,975 new reference) in combination with Kamikawa et al. (6,299,696 new reference), Bergman (5,232,511) or Matsuoka (EP 548,596 new reference).

Li et al. teach process for dry cleaning wafer surface using a surface diffusion layer. Li et al. teach forming the layer, the ozone, and the heated solution as claimed. See the abstract, and col. 4, lines 18-60.

Li et al. do not teach the acid solution as claimed.

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Kamikawa et al. teach substrate processing apparatus and substrate processing method. The reference teaches forming thin pure water film on the wafers, and using the ozone gas, and the heating step as claimed. See col. 10, line 26- col. 11, line 22.

Bergman as discussed supra in paper No. 8 teach the rotating as claimed.

Matsuoka teaches a method and apparatus for treating substrates. The reference teaches the ozone, and the rotating as claimed.

It would have been obvious for one skilled in the art to use the solution taught by Kamikawa et al. or Bergman in the Li et al. process to obtain the claimed process. This is because using HF and HCL for cleaning semiconductor is well known in the art.

It would have been obvious for one skilled in the art to use the rotating step taught by Bergman or Matsuoka in the Li et al. process to obtain the claimed process. This is because rotating the semiconductor substrate during cleaning is well known in the art.

Li et al., Kamikawa et al., Bergman, and Matsuoka do not teach the ozone rate as claimed.

It would have been obvious for one skilled in the art to adjust the ozone concentration to obtain optimum results. See Matsuoka, page 3, lines 43-47.

Conclusion

3. Applicant's arguments with respect to claims 1-24 and 26-27 have been considered but are moot in view of the new ground(s) of rejection.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zeinab E. EL-Arini whose telephone number is (703) 308-3320. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (703) 308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9310 for regular communications and (703)872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Zeinab Elarini
Zeinab E. EL-Arini
Primary Examiner
Art Unit 1746

ZEE
July 25, 2002